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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/589,665

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EXAMINER

LIU, MICHAEL

ART UNIT

PAPER NUMBER

2882

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/589,665	Applicant(s) TAKAIWA, HIROAKI	
	Examiner Michael Liu	Art Unit 2882	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 October 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 110-136 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 110-136 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Receipt is acknowledged of the Amendment filed on 01 October 2009. By the amendment, claims 14-109 have been canceled, and claims 110-136 have been newly added. Accordingly, claims 110-136 are pending in the instant application.

Priority

2. Acknowledgment is made of Applicant's claim for foreign priority based on an application filed in Japan on 2/19/04. It is noted, however, that Applicant has not filed a certified copy of the JP 2004-043114 application as required by 35 U.S.C. 119(b).

Specification

3. The amendment to the title has been considered, and as a result, the objection to the title is withdrawn.

4. The abstract of the disclosure is objected to because the label "(LQ)" should be changed to --(L)-- to match the rest of the specification. Correction is required. See MPEP § 608.01(b).

Claim Objections

5. The cancellation of claims 14-109 have been considered, and accordingly, the claim objections for claims 14-109 are withdrawn.

6. Claims 110, 114, 115, 117, 118, 124, 130, 131, and 134 are objected to because of the following informalities:

a. In claims 110, 114, 115, 117, 118, 129, and 131, after the first instance of "gas" in independent claims 110 and 131, the remaining instances of "gas" should be changed to --the gas--.

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- b. In claims 110 and 131, "changing from gas" should be revised to --changes from the gas--.
- c. In claim 124, "a substrate" should be changed to --a second substrate--.
- d. In claim 130, the first instance of "a substrate" should be changed to --the substrate--. The second instance of "a substrate" should be changed to --the second substrate--.
- e. In claim 134, the first instance of "a substrate" should be changed to --a first substrate--. The second instance of "a substrate" should be changed to --a second substrate--.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

- 7. The claim amendments have overcome the rejections under Takahashi and Deguchi. Upon further review, a new rejection is applied under Tsuji.
- 8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

- 9. Claims 110-119, 126, 127, 131, 135, and 136 are rejected under 35 U.S.C. 102(b) as being anticipated by Tsuji et al (WO 02/054463; referenced English equivalent US 6,922,910).

Claims 110, 131: Tsuji discloses an exposure apparatus (10) (Fig 1) and an exposure method including an exposure region (region under PL) performing an

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exposure process that irradiates an exposure light on a substrate (W) and a measurement region (region of IF) performing a measurement process to the substrate, the exposure apparatus comprising:

a movable member (WST) (C8L21-22) that holds the substrate and moves between the exposure region and the measurement region;

an optical member (PL) provided at the exposure region that irradiates the exposure light to the substrate;

a measurement device (IF) provided at the measurement region that measures the substrate (C8L26-30: measures position of WST, on which W is fixed); and

a prevent device (50) which prevents gas in the exposure region from flowing into the measurement region (C14L13-16: side-flow prevents gas in PL from flowing into IF), wherein

the gas that contacts the substrate changes from the gas in the measurement region to the gas in the exposure region (gas moves from IF to PL) according to the movement of the movable member (WST can also move from IF to under PL).

Claims 111, 135: the prevent device sets the environment conditions (through AF4, CF4) of the exposure region or the measurement region or both regions.

Claim 112: the environment conditions includes cleanliness (C10L33-39: remove chemical contaminants) or temperature or pressure or humidity or any combination of these.

Claim 113: the prevent device is an air conditioning device (50).

Claim 114: a gas flow control member (70) controls direction of a flow of the gas so that movement of the gas from the exposure region to the measurement region is minimized (C14L5-6: 70 operates 64, which blows gas from IF to PL).

Claim 115: the gas flow control member comprises:
a chamber (34), which includes the exposure region and the measurement region, and
a blower (64) that makes the gas within the chamber flow from the measurement region toward the exposure region.

Claim 116: the blower comprises:
an intake port (75) formed on the measurement region, and
an exhaust port (66) formed on the exposure region.

Claim 117: the blower flows the gas from the intake port toward the exhaust port (C16L16-26) along a surface (C8L21-22: stage base) that the movable member moves thereon.

Claim 118: the prevent device includes a suction device (66) that suctions the gas of the exposure region (66 has lower pressure relative to higher pressure of gas in 34 and therefore acts as suction device).

Claim 119: the prevent device prevents the gas from moving from the exposure region to the measurement region (C14L13-16: side-flow prevents gas from moving from PL to IF).

Claims 126, 136: A device manufacturing method that includes a lithography process, wherein

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the exposure apparatus of Claims 110 and 131 is used in the lithography process.

Claim 127: the substrate is held by the movable member so that the substrate contacts the gas in a movement path of the movable member.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 120-122, 128, 129, 132, and 133 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsuji as applied to claims 110 and 131 above, and further in view of Fukami (WO 99/49504; translation provided to Applicant).

Claims 120, 121, 132: Tsuji discloses all limitations except for the substrate being exposed to the exposure light via a liquid.

Fukami teaches:

Claim 120: the substrate W is exposed to the exposure light IL via a liquid 7.

Claims 121, 132: an immersion device 5, 6 that forms an immersion area 7 partially between the substrate W and the optical member PL, the immersion device is disposed at the exposure region.

At the time the invention was made, it would have been obvious to one of ordinary skill in the art to expose the substrate of Tsuji via a liquid, as done by Fukami,

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for the purpose of increasing the depth of focus in order to improve the resolution (P4L22-P5L3).

Claim 122: Tsuji in view of Fukami discloses the prevent device prevents the gas affected by the liquid from moving from the exposure region to the measurement region (C14L13-16: side-flow prevents gas from moving from PL to IF).

Claims 128, 133: Tsuji in view of Fukami discloses the measurement is performed at the measurement region without a liquid on the substrate (position of WST first measured to be under PL before applying liquid to W).

Claim 129: Tsuji in view of Fukami discloses the gas in the exposure region has higher humidity than the gas in the measurement region (gas in PL has higher humidity due to presence of liquid).

12. Claims 123-125, 130, and 134 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsuji as applied to claims 110 and 131 above, and further in view of Nishi et al (6,400,441).

Tsuji discloses all limitations except for a second movable member that holds a second substrate.

Nishi teaches:

Claim 123: a second movable member (WS2) (Fig 1) that moves between the exposure region (region under PL) and the measurement region (region of 18), the second movable member moving independently from the movable member (WS1) (C44L19-21).

Claim 124: the second movable member holds a second substrate (W2).

Claim 125: the movable member and the second movable member are supported by a same base (12).

Claims 130, 134: a process of the exposure (by PL) for the substrate (W1) held by the movable member and a process of measurement (by 18) for the second substrate held by the second movable member are performed simultaneously (Fig 1).

At the time the invention was made, it would have been obvious to one of ordinary skill in the art to two wafer stages of Nishi in the exposure apparatus of Tsuji, for the purpose of improving the throughput (Abstract).

Response to Arguments

13. Applicant's arguments with respect to the rejections under Takahashi and Deguchi have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

14. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Liu whose telephone number is 571-272-9019. The examiner can normally be reached on Monday through Friday 9 am - 5 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ed Glick can be reached on 571-272-2490. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Michael Liu/
12/10/09

Michael Liu
Examiner
Art Unit 2882

/Peter B. Kim/
Primary Examiner, Art Unit 2882